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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,251	05/10/2005	Daniel Kortvelyessy	2002P03595WOUS	8745

7590 02/14/2008  
Siemens Corporation  
Intellectual Property Department  
170 Wood Avenue South  
Iselin, NJ 08830

EXAMINER
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WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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02/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/511,251	<b>Applicant(s)</b> KORTVELYESSY ET AL.	
	<b>Examiner</b> Harry D. Wilkins, III	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 10-14 and 16-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-14 and 16-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status***

1. Applicant's arguments, see page 5, filed 15 November 2007, with respect to Kool et al teaching that excessive agitation is usually undesirable have been fully considered and are persuasive. The rejection of claims based on Kool et al has been withdrawn.

### ***Claim Objections***

2. Claim 10 is objected to because of the following informalities: in line 3, there appears to be a grammatical error in that the first method step recites "a vessel sized and configured to containing an electrolyte that the component". The examiner will interpret this to read "a vessel sized and configured to contain an electrolyte and the component". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 10-13, 16-17, 22-23 and 26 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hocheng (US 6,315,885).

Hocheng anticipates the invention as claimed. Hocheng teaches (see figure 1, abstract and cols. 3-6) an apparatus for electropolishing a component including a vessel (3) sized and configured to contain an electrolyte and the component, an electrode (11) arranged in the electrolyte and electrically connected to the component through an

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electrical current pulse generator (1) capable of generating current pulses and an ultrasound probe (2) arranged in the electrolyte to cause agitation to improve the electropolishing process.

With respect to the component being a turbine component, such feature relates to the workpiece acted upon by the claimed apparatus and is not given patentable weight. See MPEP 2114 and 2115.

Regarding claim 11, this feature relates to the workpiece acted upon by the claimed apparatus and is not given patentable weight. See MPEP 2114 and 2115.

Regarding claim 12, the power supply (electrical current pulse generator) taught by Hocheng was capable of operating with a set potential over which the current pulses were applied. As such, the prior art was capable of operating in the claimed fashion. See MPEP 2114 and 2115.

Regarding claim 13, Hocheng teaches a process including the steps of (1) arranging the component and an electrode in an electrolyte, (2) electrically connecting the component, the electrode and a power supply, (3) generating a pulsed current using the power supply (4) combining a plurality of current pulses in sequence during the electropolishing and (5) arranging an ultrasound probe within the electrolyte to improve the electropolishing process. With respect to the claimed step "forming a sequence of current/voltage pulses by a plurality of different blocks with a block having a current pulse" Hocheng teaches (see col. 5, lines 45-49) that operating the DC power mode included several known operating parameters that could be optimized including voltage,

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current and pulsing rate. Therefore, Hocheng teaches a step of forming a sequence of current pulses to create an optimum electropolishing effect.

Regarding claim 16, Hocheng teaches using the pulses for electropolishing (i.e.- coating removal).

Regarding claim 17, Hocheng teaches that each block would be defined by current value, pulse rate, etc.

Regarding claims 22 and 23, Hocheng teaches using a simple on-off (square-wave) pulse train.

Regarding claim 26, the plurality of current pulses are combined repeatedly until the sufficient amount of material has been removed.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hocheng (US 6,315,885).

Hocheng teaches that the pulse rate was “a fraction of a second per cycle”. Thus, Hocheng fails to expressly teach that the pulse times were in the range of 1 to 10 milliseconds. However, since Hocheng teaches that the pulsing rate was a result effective variable, it would have been obvious to one of ordinary skill in the art to have optimized the pulsing rate such that the pulse times were within the claimed range.

7. Claims 14, 20, 21 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hocheng (US 6,315,885) in view of Tyler et al (US 4,004,992).

Hocheng fails to teach applying a “base” current at all times and superimposing the pulses onto the base current.

However, it was known in the art of electropolishing, that application of a current pulse sequence could be superimposed onto an existing base current. Tyler et al show (see abstract, figure 6 and col. 2) that the base current and superimposed pulses increased uniformity of electropolishing and reduced wear on the working electrode.

Therefore, it would have been obvious to one of ordinary skill in the art to have adapted the method of Hocheng to utilize a base current as is taught by Tyler et al because the combination of a base current and current pulses increased uniformity and reduced working electrode wear.

8. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hocheng (US 6,315,885) in view of Kool et al (US 6,599,416).

Regarding claim 18, Hocheng fails to teach matching each block to a constituent of an alloy to be removed to boost the removal of the constituent.

Kool et al teaches the current source/cell potential can further be “tuned”, which relies on adjusting the cell potential to selectively strip or partially strip portions of the metal from the article/component teaching the realization that different applied potentials/currents are more effective at removing certain layers of the coating based on the needs of one skilled in the art would allow for “different blocks” of pulsed current at different times during the stripping process as necessary to most effectively strip the metal article [7] (col. 9 lines 3-12, col. 8 lines 30-39, figure 5 and 6, col. 10 lines 48-57).

Therefore, it would have been obvious to one of ordinary skill in the art to have created blocks specifically tuned for removing a specific constituent from the component as taught by Kool et al in the process of Hocheng because the tuned blocks increased removal of the constituent.

Regarding claim 19, Hocheng fails to teach removing a MCrAlY coating.

Kool et al teach removing an alloy layer of the MCrAlY type (col. 6 line 20-27) and wherein M is iron, cobalt, or nickel (col. 5 lines 50-56). The process operated by an electropolishing technique on turbine engine components.

Therefore, it would have been obvious to one of ordinary skill in the art to have adapted the process of Hocheng to process turbine engine components covered with a MCrAlY coating as suggested by Kool et al because Kool et al teach that the same electropolishing process was adequate for performing the electropolishing on the

MCrAlY coated turbine components and Hocheng teaches that the electropolishing process was able to reduce surface roughness.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Harry D Wilkins, III  
Primary Examiner  
Art Unit 1795

hdw